and illustrates a favorable outcome to what looked at the time to be a case going on to an intracranial complication.

CASE II.—M. O., female, aged twenty-eight years, was seen on April 30, 1917. The history was that her right ear had been sore for five weeks and had been discharging since April 5, a little over three weeks. Pain at onset had been severe for over two weeks, when a paracentesis had been done, with a certain amount of relief. For the past two or three days the discharge had been profuse and the pain had reappeared.

On examination her general condition was somewhat below par, her temperature being 100°. The right ear showed a somewhat congested drum, with a bulging nipple-like perforation, indicating retention. On the following day she was operated on, a simple mastoid operation being carried out. The cells were filled with swollen mucosa, but there were no marked changes in the bone. A free paracentesis was carried out at the same time, and there was evidence of a certain amount of retention in the middle ear. The wound healed rapidly and the discharge from the ear stopped a day or so after the operation.

On the third or fourth day after operation (about six weeks from the onset of the otitis) she developed a paresis of the right external rectus, but as the ear condition gave every evidence of satisfactory healing, no further interference was carried out, and the paresis disappeared spontaneously in three or four days.

This last case is interesting as illustrating the development of the paresis after the middle-ear condition was on the high road to recovery.

A CLINICAL PATHOLOGICAL STUDY OF AN UNUSUAL SYPHILITIC MANIFESTATION RESEMBLING JUXTA-ARTICULAR NODULES.

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The case which forms the material for the present study was seen more than a year ago, but the exigencies of the period delayed this report.

At the time this case was first seen an effort was made to find reference to a like condition in the available literature. Although mention of syphilis of the tendons was frequent enough, no study was found which compared with this case. We were led to believe that we were dealing with a rare syphilitic manifestation which merited reporting.

CASE REPORT. The patient, R. R., was an American woman, aged twenty-nine years, and of more than average intelligence. She was born in New York and had never left the country. Her father had died of tetanus at forty-nine years; her mother of an unknown cause at forty-six years. The patient had three brothers and sisters alive and well. There had been one stillbirth among her mother's pregnancies, and one child which had weighed three pounds at birth died at thirteen days.

R. R. had married at eighteen years. She had one abortion at four months and did not become pregnant again. Her husband, who had always been well, died in a railroad accident, after two years of matrimony.

At twenty-two the patient married again. Although her husband is healthy, and they desire children, she has not become pregnant.

Except for a vaginal discharge after the abortion the patient had never been sick. She is certain that she has never had a disease of the skin or mucous membrane.

The presence of tumors on the extremities had been noted for about eight years. The first lesion was on the extensor surface of the left elbow and about the size of a pea. Additional masses have appeared since in an unnoted order, and usually were noticed accidentally. For instance, the mass on the knee was of appreciable size when first noticed four years ago. Until her present consultation the patient had never shown these lumps to a doctor and had not taken treatment.

Physical Examination. Patient is an adult white woman weighing 178 pounds. The hair of the head is profuse and well distributed. The shape of the head is normal. There is no mastoid tenderness nor discharge from the ears. The external ear presents no irregularities. The eyes are hypermetropic and require lenses. The pupils are central, equal and react to light and accommodation. The nose is negative. The tongue presents a superficial but nonfissured glossitis. The tonsils are enlarged and are slightly erythematous. The palate is highly arched, but with no suggestion of perforation. The teeth are all present and well preserved. There is no notching of the incisors.

The thyroid is not enlarged. There are no pulsations visible in the neck.

The lungs are resonant throughout.

The woman is rather fleshy and large mammæ overhang the area of heart dulness, so that the left border is rather difficult to determine. There is no enlargement to the right. There is no bulge over any part of the anterior chest wall. No cardiac impulses are seen. The heart rate is 82. The sounds are normal. The rate at the radial pulse is the same as the heart and of good quality.

There is no suggestion of the "water hammer" of Corrigan. The blood-pressure was not determined.

The smooth liver edge was felt under the costal arch. There were no masses felt in the abdomen. There was no tenderness elicited by pressure anywhere over the abdomen.

The skin and mucous membranes were free of any lesions or scars.

The patient was menstruating and no vaginal examination was made.

The contours of the extremities were normal, except for nodules at both elbows and over the left knee.

The nodules on the left elbow extend in a line from the olecranon process to the styloid process of the ulna. The first is situated two inches from the olecranon. It is semiglobular and about 3 by 2 cm. It lies entirely under the skin, which is freely movable over it. The tumor appears attached to or part of some subcutaneous structure, which limits motion of the mass except for about 1 cm. in any direction. To the touch the mass appears lobulated and made up of individual although connected masses. These are distinctly hard and cannot be indented by pressure over them. The skin over the lesion is not stretched nor is it red.

The second tumor on the left arm is about 2½ cm. distant from the first. It is 3 by 4 cm. It appears made up of only two connected lobules rather than many, and otherwise is of the same appearance.

No other masses are present on the left arm.

The lesions on the right arm are symmetrically arranged with those on the left. The masses are of the same character as those of the left arm.

Over the left knee and in the ligamentum patellæ, occupying the space of the normal indentation between the patella and the tubercle of the tibia, is a single mass about 2 by 2 cm., which gives the same resistance and is of the same structure as that described for the elbow tumor. The mass moved with the motion of the leg upon the thigh and gives no discomfort. There are no other lesions present on the legs.

The clinical diagnosis of multiple gummata of the tendons was ventured by both Dr. Young and myself. Blood for a Wassermann was taken and part of one of the nodules removed for section. The incision healed nicely.

The Wassermann was reported four plus positive to both alcoholic and cholesterinized antigens. (Laboratory of the New York Skin and Cancer Hospital.)

Radiographs taken by Dr. Young showed the nodules as outline of soft parts. No shadow of bone nor connection with bone was found.

The biopsy material was sectioned and stained.

Preparations with Levaditi silver impregnation were made and prolonged search for S. pallida proved unavailing.

Microscopically the tissue of the tendon was interspersed with larger and smaller accumulations of round cells. These aggregations were about the bloodvessels, which were unusually numerous and indicated that new bloodvessels and capillaries had formed in tendon, which is ordinarily almost free of bloodvessels. The type of cell predominating in the peri-arterial gummata was the round cell with occasional spindle-shaped epithelial cells. There were no giant cells nor polynuclears. There was no evidence of caseation nor necrosis. No cartilage nor bone had formed.

The bloodvessels were extremely numerous for tendon. The majority were of the single layer capillary form. The lumen of even the smallest was open and the lining appeared uninjured. No vessel was seen of sufficient size to show evidence of the infiltration of the coats.

There was no formation of a fibrous connective-tissue wall about the mass. It was apparently a diffuse process. The histopathological diagnosis was "granuloma, probably syphilitic."

We have considered that the patient received her syphilitic infection at the time of her first marriage. The early abortion and the subsequent barren period of eleven years is evidence in favor of this. The first appearance of this unusual lesion occurred three years after the syphilitic infection. Speculation as to the localization of the spirochetes, to which the gummatous process is the reaction, would be confined to the theory that in the period of spirochetocemia, spirochetes lodged locally in the infrequent end-capillaries of normal tendon. The impetus for the reaction to the presence of the organisms may have been some mild injury to the exposed sites of the elbows and knees. The fact that the patient knows of no eruption nor sore that would indicate syphilitic infection does not exclude her syphilitic infection. That the nodules did not ulcerate we believe to be due to the low plane of the metabolism of tendon.

At the time of the clinical examination the differential diagnosis presented little difficulty. Bursitis, ganglion, tophi, tendosynovitis and sesamoid bones were all easily overruled.

Recently the attention of one of us (G) has been drawn to the clinical resemblance between this described gumma lesion and juxta-articular nodules.

Juxta-articular nodules were first described by Jeanselme in 1899 among the Indo-Chinese. (To translate): "Clinically the nodules are of various sizes, globular or polyglobular, most often collected in masses. In the beginning the tumors lie deep in the subcutaneous tissue. Some of them are movable and roll under the fingers like ganglion; others appear adherent to the periosteum, from which they possibly originate. Later, these nodules become more superficial and are incorporated in the skin. Later still they raise from the surface as protuberances of very hard consistency. The skin undergoes no modification; it is only distended and perhaps discolored at the highest point. The nodules are remarkably symmetrical. They occupy the external aspect of the extremities, surmounting by preference the bony prominences and grouping about joints. The points of predilection on the lower extremity are: the external malleolus; head of the tibia; tubercle of the tibia; anterior surface of the knee; trochanteric and sacrococcygic regions; on the upper extremity: the olecranon; epitrochlear; acromium; and dorsal surface of the digits."

The generally ascribed cause for the nodules is the result of the habit of the natives to lie with the elbows and knees in contact with the ground.

"On section studied with low magnification the nodules are divisible into three zones—an internal or zone of degeneration, an external or inflammatory and an intermediate or zone of transition.

"The degenerative zone is formed of irregular blocks, homogeneous and translucent, which stain a deep red with eosin. These blocks are fissured in all planes and their contours are convoluted. With higher magnification (ocul. I, obj. 6) the degenerative substance is subdivided into two portions; the first, really homogeneous, is a clear red; the second portion is more or less merged with the preceding and is vascular, slightly fibrillar and a violet red. In the spaces which separate the blocks into fragments are various ordinary polynuclears undergoing disintegration. The number of these leukocytes increases as one approaches the periphery of the degenerated mass. The leukocytes are situated in the large otherwise empty spaces which appear cut out by a punch in the dense fibrous tissue. At the borders of the large empty spaces are disseminated some smaller degenerative blocks, all easy to recognize, even the smallest, by the bright red color.

"The zone of inflammatory reaction is made up of two very different structures: one of fibrous tissue, the other of yellow meat like tissue. In the latter one finds: large and anastomosing fixed cells within a reticulum where the network is filled by criss-crossing fibrils in all planes; some fixed cells, freed in the form of macrophytes; some giant cells, with nuclei originating from connective tissue; innumerable plasma cells in the interstitial spaces; considerable number of polynuclears, most of the ordinary type, and some eosinophiles; and finally numberous blood and lymph capillaries, which consist of only one layer of flattened or raised epithelial cells.

"Between the frank inflammatory zone and that of sclerosis there exists some transitional forms. Little by little the collagen elements predominate over the cellular, the fibrils dispose themselves in thick bundles, separated by proper interstices, forming a mosaic of fixed flattened cells. Little by little the vessels become fewer and their walls thinner, and a compensatory diminution of the polynuclears exists.

"The zone of transition between that of degeneration and that of inflammatory reaction is characterized by a gradual homogenization of the connective tissue which loses the fibrillar condition and stains deeply with eosin. Between the focus of necrosis and focus of the inflammatory area begins an eliminating sulcus which gradually causes the degenerative tissue to form as a foreign body within the fully sclerosed tissue.

"The bacteriological examination has been completely negative. In sections stained by Ziehl or Gram, or after treatment with 40 per cent. potassium hydroxide, we have never demonstrated any microbes.

"The microscopic examination has revealed nothing as to the nature of the nodule. They certainly do not reveal syphilis nor tuberculosis, nor any suggestion of xanthoma which have characteristic structures. The possibility of tophi naturally presents itself, but the site of the small tumors, their multiplicity, indolence, structure, absence of tophi of the ears, the rarity of pains and malformations about the joints, and finally the regimen of the class of poor affected are little in favor of such a supposition. The nodules are not fibroma, nor sclerosed forms of peri-articular bursæ."

It has been thought wise to give a rather full account from Jeanselme on juxta-articular nodules because of the scant attention paid to them in most of the English works, even those on tropical medicine. Were it not for the histology we believe it would have been difficult to differentiate the case of multiple gummata of the tendons from juxta-articular nodules.

SUMMARY. A case of multiple and symmetrical gummata of the tendons is described which clinically closely resembles the tumors of juxta-articular nodules. The microscopic picture is very different, however, and hence the two conditions cannot be confused.

Unfortunately we were not able to observe the effect of antisyphilitic treatment, but the suggestive history, positive Wassermann, and histology of one of the lesions puts the diagnosis of multiple syphilitic gummata of the tendons on a sound basis.

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